

GOLDSPINK et al.
Serial No. 09/852,261

IN THE CLAIMS

Amend the claims as follows.

Claims 1-13 (Canceled).

14. (New) A method of treating a damaged nerve,
said treatment comprising administering to a subject comprising said nerve an
effective non-toxic amount of an MGF (mechano-growth factor) polypeptide having the
ability to reduce motoneurone loss by 20% or greater in response to nerve avulsion,
said administration comprising delivering said MGF polypeptide to the site of said
damage;

said MGF polypeptide comprising at least one sequence selected from the group
consisting of:

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- (a) the amino acid sequence of human MGF (SEQ ID NO: 2), rat MGF (SEQ ID NO: 4), rabbit MGF (SEQ ID NO: 6);
 - (b) an amino acid sequence encoded by exons 5 and 6 of human MGF DNA (SEQ ID NO: 1), an amino acid sequence encoded by exons 5 and 6 of rat MGF DNA (SEQ ID NO: 3), an amino acid sequence encoded by exons 5 and 6 of rabbit MGF DNA (SEQ ID NO: 5), an amino acid sequence encoded by exons 4, 5 and 6 of human MGF DNA (SEQ ID NO: 1), an amino acid sequence encoded by exons 4, 5 and 6 of rat MGF DNA (SEQ ID NO: 3), an amino acid sequence encoded by exons 4, 5 and 6 of rabbit MGF DNA (SEQ ID NO: 5);
 - (c1) an amino acid sequence having 80% or greater sequence identity to an amino acid sequence of (a);

- (c2) an amino acid sequence having 80% or greater sequence identity to an amino acid sequence of (b);
- (d) an amino acid sequence encoded by a nucleic acid sequence capable of selectively hybridising to a nucleic acid sequence encoding an amino acid sequence of (b); and
- (e) an amino acid sequence comprising a fragment of at least 20 contiguous amino acids of a sequence of (b), (c2) or (d).

15. (New) A method of claim 14 wherein said damaged nerve is a nerve of the peripheral nervous system (PNS).

16. (New) A method of claim 14 wherein said MGF polypeptide is administered to said subject at a site of said damaged nerve by means of a conduit placed around the damaged nerve.

17. (New) A method of claim 16 wherein the conduit comprises Poly-3-hydroxy-butyrate (PHB).

18. (New) A method of claim 14 wherein the damaged nerve was severed.

19. (New) A method of claim 14 wherein said MGF polypeptide has the ability to reduce motoneurone loss by 50% or greater in response to nerve avulsion.

20. (New) A method of claim 14 wherein said MGF polypeptide has the ability to reduce motoneurone loss by 80% or greater in response to nerve avulsion.

21. (New) A method of claim 14 wherein the MGF polypeptide is unglycosylated.

22. (New) A method of claim 16 wherein said conduit comprises at least one of collagen and silicone.

23. (New) A method of treating a severed nerve comprising administering to a subject comprising said nerve an effective non-toxic amount of an MGF (mechanogrowth factor) polypeptide having the ability to reduce motoneurone loss by 20% or greater in response to nerve avulsion,

said administration comprising delivering said MGF polypeptide to the site of said damage;

said MGF polypeptide comprising at least one sequence selected from the group consisting of:

- (a) the amino acid sequence of human MGF (SEQ ID NO: 2), rat MGF (SEQ ID NO: 4), rabbit MGF (SEQ ID NO: 6);

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- (b) an amino acid sequence encoded by exons 5 and 6 of human MGF DNA (SEQ ID NO: 1), an amino acid sequence encoded by exons 5 and 6 of rat MGF DNA (SEQ ID NO: 3), an amino acid sequence encoded by exons 5 and 6 of rabbit MGF DNA (SEQ ID NO: 5), an amino acid sequence encoded by exons 4, 5 and 6 of human MGF DNA (SEQ ID NO: 1), an amino acid sequence encoded by exons 4, 5 and 6 of rat MGF DNA (SEQ ID NO: 3), an amino acid sequence encoded by exons 4, 5 and 6 of rabbit MGF DNA (SEQ ID NO: 5);
 - (c) an amino acid sequence having 80% or greater sequence identity to an amino acid sequence of (a) or (b);
 - (d) an amino acid sequence encoded by a nucleic acid sequence capable of selectively hybridising to a nucleic acid sequence encoding an amino acid sequence of (b); and
 - (e) an amino acid sequence comprising a fragment of at least 20 contiguous amino acids of a sequence of (b), (c) or (d).

24. (New) A method of claim 23 wherein said the nerve damage is to a nerve of the peripheral nervous system (PNS).

25. (New) A method of claim 23 wherein said MGF polypeptide is administered to said subject at a site of said severed nerve by means of a conduit placed around the severed nerve.

26. (New) A method of claim 25 wherein the conduit comprises Poly-3-hydroxybutyrate (PHB).

27. (New) A method of claim 23 wherein said MGF polypeptide has the ability to reduce motoneurone loss by 50% or greater in response to nerve avulsion.

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28. (New) A method of claim 23 wherein said MGF polypeptide has the ability to reduce motoneurone loss by 80% or greater in response to nerve avulsion.

29. (New) A method of claim 25 wherein the MGF is unglycosylated.

30. (New) A method of claim 25 wherein said conduit comprises at least one of collagen and silicone.

31. (New) A method of treating a severed nerve of the peripheral nervous system (PNS),

said treatment comprising administering to a subject comprising said severed nerve an effective non-toxic amount of an MGF (mechano-growth factor) polypeptide having the ability to reduce motoneurone loss by 20% or greater in response to nerve avulsion,

said administration comprising delivering said MGF polypeptide to the site of nerve severance by means of a conduit placed around the severed nerve at the site of said severance;

said MGF polypeptide comprising at least one sequence selected from the group consisting:

- (a) the amino acid sequence of human MGF (SEQ ID NO: 2), rat MGF (SEQ ID NO: 4), rabbit MGF (SEQ ID NO: 6);
- (b) an amino acid sequence encoded by exons 5 and 6 of human MGF DNA (SEQ ID NO: 1), an amino acid sequence encoded by exons 5 and 6 of rat MGF DNA (SEQ ID NO: 3), an amino acid sequence encoded by exons 5 and 6 of rabbit MGF DNA (SEQ ID NO: 5), an amino acid sequence encoded by exons 4, 5 and 6 of human MGF DNA (SEQ ID NO: 1), an amino acid sequence encoded by exons 4, 5 and 6 of rat MGF DNA (SEQ ID NO: 3), an amino acid sequence encoded by exons 4, 5 and 6 of rabbit MGF DNA (SEQ ID NO: 5);
- (c) an amino acid sequence having 80% or greater sequence identity to an amino acid sequence of (a) or (b);

- (d) an amino acid sequence encoded by a nucleic acid sequence capable of selectively hybridising to a nucleic acid sequence encoding an amino acid sequence of (b); and
- (e) an amino acid sequence comprising a fragment of at least 20 contiguous amino acids of a sequence of (b), (c) or (d).

32. (New) A method of claim 31 wherein the conduit comprises Poly-3-hydroxybutyrate (PHB).

33. (New) A method of claim 31 wherein the MGF has said ability to reduce motoneurone loss by 50% or greater in response to nerve avulsion.

34. (New) A method of claim 31 wherein the MGF has said ability to reduce motoneurone loss by 80% or greater in response to nerve avulsion.

35. (New) A method of claim 31 wherein the MGF is unglycosylated.

36. (New) A method of claim 31 wherein said conduit comprises at least one of collagen and silicone.

37. (New) A method of claim 14 wherein said MGF polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 2, 4 and 6.

38. (New) A method of claim 14 wherein said MGF polypeptide comprises an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

39. (New) A method of claim 14 wherein said MGF polypeptide comprises an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.

40. (New) A method of claim 14 wherein said MGF polypeptide comprises an amino acid sequence having 80% or greater sequence identity to the amino acid sequence of human MGF (SEQ ID NO: 2), rat MGF (SEQ ID NO: 4), or rabbit MGF (SEQ ID NO: 6).

41. (New) A method of claim 14 wherein said MGF polypeptide comprises an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

42. (New) A method of claim 14 wherein said MGF polypeptide comprises an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.

43. (New) A method of claim 14 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

44. (New) A method of claim 14 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.

45. (New) A method of claim 14 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

46. (New) A method of claim 14 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.

47. (New) A method of claim 31 wherein said MGF polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 2, 4 and 6.

48. (New) A method of claim 31 wherein said MGF polypeptide comprises an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

49. (New) A method of claim 31 wherein said MGF polypeptide comprises an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.

50. (New) A method of claim 31 wherein said MGF polypeptide comprises an amino acid sequence having 80% or greater sequence identity to the amino acid sequence of human MGF (SEQ ID NO: 2), rat MGF (SEQ ID NO: 4), or rabbit MGF (SEQ ID NO: 6).

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51. (New) A method of claim 31 wherein said MGF polypeptide comprises an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

52. (New) A method of claim 31 wherein said MGF polypeptide comprises an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.

53. (New) A method of claim 31 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

54. (New) A method of claim 31 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.

55. (New) A method of claim 31 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 5 and 6 of SEQ ID NOs: 1, 3 or 5.

56. (New) A method of claim 31 wherein said MGF polypeptide comprises a fragment of at least 20 contiguous amino acids of an amino acid sequence having 80% or greater sequence identity to an amino acid sequence encoded by exons 4, 5 and 6 of SEQ ID NOs: 1, 3 or 5.
